



Emission Check

You're on the Road to Cleaner Air.

Health Effects from Automobile Emissions

The emissions from millions of vehicles add up. These emissions are byproducts from the engine combustion process and from the evaporation of fuel. Despite the ever-growing number of vehicles on the road, studies show that ten to thirty percent of vehicles cause the majority of vehicle-related air pollution.

This fact sheet lists some of the air pollutants associated with vehicle emissions. Because exposure to these pollutants can cause serious health problems, the U.S. Environmental Protection Agency has established air quality standards to protect our health.

Carbon Monoxide

Carbon monoxide is a colorless, odorless, poisonous gas emitted from the vehicle's exhaust as a result of incomplete combustion. It interferes with the blood's ability to carry oxygen to the brain, heart, and other tissues. Unborn or newborn children and people with heart disease are in greatest danger from this pollutant, but even healthy people can experience headaches, fatigue and reduced reflexes due to CO exposure.

Ozone

Ground-level ozone is the major component in what we know as smog.* It is not emitted directly into the air but is produced in the atmosphere when gases called hydrocarbons combine with nitrogen oxide compounds in the presence of sunlight. In the body, ozone reacts with lung tissue. It can inflame and cause harmful changes in breathing passages, decrease the lungs' working ability, and cause coughing and chest pains. Even healthy people are found to be sensitive to ozone exposure.

*Ozone smog at ground level is different from the ozone layer in the upper atmosphere, which filters out harmful solar radiation.

Sulfur Dioxide

Sulfur dioxide is emitted when fuel containing sulfur is burned in diesel engines. Sulfur dioxide exposure constricts air passages, creating problems for people with asthma and for young children, whose small lungs need to work harder than adults' lungs.

Nitrogen Dioxide

Nitrogen dioxide and related nitrogen oxides (NO_x) are produced when fuel is burned. These compounds contribute to ozone formation and are a health problem themselves. The effect of NO_x exposure on the respiratory system is similar to that of ozone and sulfur dioxide.

Lead

Lead content has been reduced in gasoline. As a result, there is a significant drop in public exposure to outdoor lead pollution. Lead poisoning can reduce mental ability, damage blood, nerves, and organs, and raise blood pressure. Even small ingestions or inhalations of lead can be harmful because lead accumulates in the body.

Particulate Matter

Particulate matter includes microscopic particles and tiny droplets of liquid. Because of their small size, these particles are not stopped in the nose and upper lungs by the body's natural defenses but go deep into the lungs, where they may become trapped and cause irritation. Exposure to particulate matter can cause wheezing and similar symptoms in people with asthma or sensitive airways. Particulate matter can serve as a vector for toxic air pollutants (see below).

Toxic Air Pollutants

Toxic air pollutants such as benzene and formaldehyde are substances from automobile emissions that are known to cause or are suspected of causing cancer, genetic mutation, birth defects, or other serious illnesses in people even at relatively low levels. The chemicals can be inhaled directly or carried by small particles (dust or lint) into the lungs.

Reducing Risk

How can we reduce the risk of health problems caused by exposure to vehicle emissions? Not driving is the obvious suggestion, but that isn't always practical. Instead, carpool, use mass transit, bicycle or walk whenever possible. The fewer vehicles on the highway, the fewer pollutants emitted to the air.

Another way to reduce vehicle pollution is by practicing good vehicle maintenance. Your vehicle owner's manual has a suggested maintenance schedule. Vehicles pollute the least amount when they are brand new. Over time, the emission control systems degrade and pollution increases. Keeping your vehicle well-maintained with regular tune-ups will prolong the efficiency of your engine and its emission control systems.

Automobile emissions testing programs are designed to ensure that vehicles are polluting as little as possible.

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